

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(Pursuant to NAC 445A.874)

Permittee Name: **Clark County School District (CCSD)**
Project Name: **CCSD Transportation Facility #1548**
Permit Action: **UIC Draft Permit Issuance**
Permit Number: **UNEV2005211**

Type of Project: **Non-contact**
Address: **975 Welpman Way**
Las Vegas, Nevada
Injection Wells (#): **one**

A. Description of Injection

Location: The injection well is a subsurface infiltration system located at the future CCSD Transportation Facility #1548, 975 Welpman Way, Las Vegas, Nevada in the SW ¼ SE ¼ of Section 8, T23S, R61E, MDB&M, in Clark County. Groundwater is present at a depth of about 240-260 feet bgs.

Latitude: 35° 57' 30" N
Longitude: 115° 10' 45" W

Characteristics: The subsurface infiltration system consists of an 85 feet x 126 feet condensation water drain field, a dosing tank, 4-inch diameter perforated pipe placed 12 to 24 inches below the surface and at least 12 feet apart, and gravel that is placed to a depth of 3 feet. Potable water used in a 30-unit evaporative cooler system (condensate water) will be injected. The system will be operational only during the months when the evaporative cooler system is used. Six months after startup, this permit will be re-evaluated as to whether the injection concentrations and flows warrant a treatment system prior to injection. This permit is issued on a one-time basis for a 5-year time period after which it is anticipated that sewer connection will be available.

The infiltration field shall be located at least 100 feet north of the Large Capacity Septic System leach field (UIC Permit #GU920140153). Injection shall not exceed 6,500 gallons per day. It is anticipated that during the summer months, **approximately half of the maximum flow into the system will evaporate in the subsurface infiltration field.**

B. Synopsis

The subject site will be built as the CCSD Transportation Facility #1548 school bus maintenance yards. Once the city sewer system reaches the area, the cooling water lines will be plumbed into the city system and the dosing tank and drain field will be abandoned.

The drain field was designed and sized using the Nevada Division of Environmental Protection WTS-22 Design Criteria for Septic Tanks and Individual Disposal Systems. A percolation test was performed at the facility on June 23, 2004 to a depth of 4 feet below ground surface (bgs). The average percolation rate at the facility was 5 minutes per inch. In addition, three profile holes were drilled to a depth of 10 feet bgs. Groundwater was not encountered in any of the borings.

The evaporative coolers bleed off water by continuously draining a small amount of water while it is in use. This flow rate can be manually set by the owner with the limits of 8 to 18 gallons per hour of usage. The evaporative coolers will also evaporate a portion of the feed water, with the amount of water evaporated varying with outdoor temperature and humidity. Based upon equations given by the manufacturer, Champion Coolers, the amount of water evaporated in each cooler during hot, dry summer days could be as high as 40 gallons per hour, while a very small amount of water will be evaporated during cooler, humid days. Based upon an average bleed-off flow rate of 10 gallons per hour, the ratio of feed water to bleed-off can range from 4:12 to 1:1 depending on the atmospheric conditions. If all 30 coolers run for 12 hours per day, with the bleed-off valves fully open, the maximum amount of water drained per day would be approximately 6,500 gallons.

Regarding water quality, evaporative coolers will not add any more minerals to the feed water. However, during the evaporation process, only pure water is evaporated and the minerals from water that gets evaporated will remain in the evaporative cooler sump. The addition of these existing minerals with minerals from the replacing feed water causes the water in the sump to become more concentrated. But, as long as water is being bled, the concentration will rise only as a function of the percentage of water evaporated versus the percentage of bleed-off water.

Per the Las Vegas Valley Water District, the Total Dissolved Solids (TDS) are, on average, around 631 parts per million (ppm). This would mean the drain water from the evaporative coolers could be estimated to be between 631 and 2500 ppm.

Condensate water from the evaporative cooler will exit from the building into a SDR-35 PVC pipeline, which will run to the dosing tank. The condensate water will be distributed into a series of at least 14 perforated pipes located in the drain field. The evaporative coolers will not be operated for approximately seven months each year. Since there will not be a continuous feed of water to this system, there will not be a continuous “wetting front” in the unsaturated zone.

C. Receiving Water Characteristics

The sedimentary profile beneath the site consists of sandy, silty gravel containing cobbles and small boulders. This material was found to be partially to moderately cemented, with interbedded lenses of caliche, dense to very hard, dry to slightly moist and light brown in color. Groundwater is present at a depth of about 240-260 feet bgs.

The inorganic chemical analysis of the receiving zone will be required when the two monitoring wells are installed.

D. Procedures for Public Comment

The Las Vegas Review Journal and/or Las Vegas Sun will receive notice of the Division’s intent to issue a UIC permit authorizing the facility to inject into the groundwater of the State of Nevada for publication. The notice will be mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of 30 days following the publication date of the said public notice. The comment period can be extended at the discretion of the Administrator. All written comments received during the comment period will be retained and considered in the final determination.

A public hearing on the proposed determination can be requested by the applicant, any affected state, any affected interstate agency, the regional administrator of EPA Region IX or any interested agency, person or group of persons.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings will be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

E. Proposed Determination

The Division has made the tentative determination to issue the permit for five years.

F. Proposed Limitations and Special Conditions

TABLE 1

Parameter	Frequency	Location	Limitations
UIC Sample List 1 (Total Recoverable Metals)	By Day 2 of startup ⁽¹⁾ , then Quarterly	All Monitoring Wells	Primary and Secondary Drinking Water Standard MCLs or background concentrations, whichever is higher.
UIC Sample List 1 (Total Recoverable Metals)	Within 2 days of start-up ⁽¹⁾ , Weekly for the first three weeks, then Monthly thereafter	Condensate water - Discharge pipe at building or at dosing tank prior to injection into the infiltration field	Total Dissolved Solids may not exceed 2,500 mg/L (ppm). If any other parameter exceeds Primary and Secondary Drinking Water Standard MCLs by a factor of 2, the UIC Program must be notified within five days. ⁽¹⁾
Injection Rate (gpm) ⁽²⁾ , Volume (gpd) ⁽²⁾ , and Cumulative Volume (gal)	During Operation: Recorded weekly, Calculated monthly	Condensate water - Discharge pipe at building or at dosing tank prior to injection into the infiltration field	Maximum injection volume shall be 6,500 gallon per day ⁽²⁾

1. Fax results to Becky Linnell of the UIC Program at 775-687-4684 within five days of sampling. If any parameters exceed Federal and State Drinking Water Standard MCLs by a factor of 2, the Division may require treatment prior to injection.
2. Injection rate and volume shall be calculated during hours of operation only. Report average, lowest, and highest injection rates.

G. Rationale for Permit Requirements

The permit conditions will help to ensure that the injectate does not adversely affect the existing water quality or hydrologic regime.

Prepared by: Becky E. Linvill
Date: January 17, 2006

Appendix A

PARAMETER	Potable Water Minimum	Potable Water Maximum	Potable Water Average	DRINKING WATER STANDARDS (MCL)
Total Dissolved Solids, mg/L			631 (1)	1000
pH			7.7	6.5 - 8.5
Chloride, mg/L			94	400
Fluoride, mg/L	320	840	762	4
Sulfate, mg/L	240	260	253	500
Nitrate (as nitrogen), mg/L	0.420	0.500	0.458	10 (NO ₃ -N) & 45 (NO ₃)
Nitrite (as nitrogen), mg/L			ND	1
Aluminum, mg/L			ND	0.2 (Advisory)
Antimony, mg/L			ND	0.006
Arsenic, mg/L			ND	0.05
Barium, mg/L	140	140	140	2
Beryllium			ND	0.004
Cadmium, mg/L			ND	0.005
Chromium, mg/L			ND	0.1
Copper, mg/L	0.110	1.40	1.10 (2)	1.3
Cyanide, mg/L			ND	
Lead, mg/L	ND	0.005	0.002 (2)	0.015
Iron, mg/L			ND	0.6
Magnesium, mg/L			29	150
Manganese, mg/L			ND	0.1
Mercury, mg/L			ND	0.002
Nickel, mg/L			ND	0.1
Selenium, mg/L	ND	0.002	0.001	0.01
Silver, mg/L			ND	0.05
Thallium, mg/L			ND	0.002
Zinc, mg/L			0.165	5
Gross alpha, pCi/L			1.99	15
Gross beta, pCi/L			3.64	50

(1) Values reported by Las Vegas Valley Water District website in 2005 for samples collected in 2004.

(2) 90th Percentile of all samples collected

ATTACHMENT B

UIC Monitoring Report Summary and Check List - UNEV2005211

Please submit this completed page with every monitoring report.

____ Please check to ensure all conditions required by the UIC permit are in the report.

____ Check off each item below that is in the report.

Parameter	Frequency	Location	Limitations
UIC Sample List 1 (Total Recoverable Metals)	By Day 2 of startup ⁽¹⁾ , then Quarterly	All Monitoring Wells	Primary and Secondary Drinking Water Standard MCLs or background concentrations, whichever is higher.
UIC Sample List 1 (Total Recoverable Metals)	Within 2 days of start-up ⁽¹⁾ , Weekly for the first three weeks, then Monthly thereafter	Condensate water - Discharge pipe at building or at dosing tank prior to injection into the infiltration field	Total Dissolved Solids may not exceed 2,500 mg/L (ppm). If any other parameter exceeds Primary and Secondary Drinking Water Standard MCLs by a factor of 2, the UIC Program must be notified within five days. ⁽¹⁾
Injection Rate (gpm) ⁽²⁾ , Volume (gpd) ⁽²⁾ , and Cumulative Volume (gal)	During Operation: Recorded weekly, Calculated monthly	Condensate water - Discharge pipe at building or at dosing tank prior to injection into the infiltration field	Maximum injection volume shall be 6,500 gallon per day ⁽²⁾

1. Fax results to Becky Linvill of the UIC Program at 775-687-4684 within five days of sampling. If any parameters exceed Federal and State Drinking Water Standard MCLs by a factor of 2, the Division may require treatment prior to injection.
2. Injection rate and volume shall be calculated during hours of operation only. Report average, lowest, and highest injection rates.

Check box for each item submitted below:

	a.	Check list form attached to this permit as Attachment B, submit with every report ;
	b.	The UIC permit number;
	c.	The results of the chemical analysis as required by Part I.A.9 Table 1;
	d.	Description of hours of hours of injection operation, including times of any shut downs, start-up or upsets; If no injection has occurred, report the non-injection status and the reason the system is not in operation.
	e.	For each month in the reporting period, the total cumulative volume of condensate injected (gal/month). Report the weekly injection volumes during hours of operation only;
	f.	For each week in the reporting period, the average, lowest, and highest operating injection rate (gpm) during hours of operation only;
	g.	Summary narrative report of monitoring activities for that reporting period. The report shall include, but not be limited to, any problems encountered with the system, the results of any tests performed during that period, and any changes noted to the ground water.

* The purpose of this check-list is to assist the Permittee and the UIC program staff that all permit conditions for monitoring is submitted.